

ABSTRACT

According to the present state of the art, endoscopic cannulation of the common bile duct and papillotomy and/or sphincterotomy of the Papilla of Vater and/or the Sphincter of Oddi is accomplished by advancing a sphincterotome (or papillotome or cannulotome) into an endoscope/duodenoscope so that the distal tip of the sphincterotome exits the endoscope adjacent the sphincter muscles at the Papilla of Vater. The endoscope mechanisms are then manipulated to orient the distal tip of the sphincterotome to the desired position for proper cannulation of the duct. Accurate and consistent control of the length of the exposed blade is made difficult due to a number of factors. These factors include: 1) differences in the inside diameters of the outer tube and the needle knife wire, 2) the orientation of the needle knife wire within the outer tube, 3) the mismatch of tolerance of the needle knife wire and the inside diameter of the extrusion, 4) anatomy, and 5) endoscope manipulation. A sphincterotome incorporating the present invention will provide the user with an indication of the exposed blade length and will allow the physician to control the length of the exposed blade. According to one embodiment of the present invention, various visual indications are presented to the user as the needle knife is advanced from its outer sheath. These visual indications, combined with a mechanical method to hold the knife in position during catheter placement allows the user to perform precise incisions. Presently available products that may be modified according to the present invention include, but are not limited to, Boston Scientific Sphincterotomes and Needle Knives.